

**Notice of Allowability**

Application No.

10/045,927

Examiner

Nasser G. Moazzami

Applicant(s)

BERG ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 02/28/2005 and interview with applicant's representative on 04/20/2005 and 04/22/2005.
2. ☒ The allowed claim(s) is/are 1-9.
3. ☒ The drawings filed on 09 January 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date attached.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

**NASSER MOAZZAMI**  
**PRIMARY EXAMINER**

*[Signature]*  
04/25/05

## **DETAILED ACTION**

### **EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Michael A. Dryja (Reg. No. 39,662) on 04/20/2005 and 04/22/2005.

The application has been amended as follows:

#### **In the claims**

1. (Currently amended) A method for maintaining cache coherence in a multiprocessor system having a plurality of nodes, each node having at least one cache, a memory device local to the node, and at least one processor device, the method comprising:

storing information regarding the state of data exclusively in an interconnect communicatively connecting said nodes with one another, such that the interconnect is a sole repository of cache coherence information within the multiprocessor system;

checking said stored information to determine the location of the most current copy of a requested portion of data, in response to a request by a requesting node for

the requested portion of data;

retrieving said current copy of requested portion of data and directing said data to the requesting node;

checking said stored information to determine the location of the requested data portion; and

simultaneous to the retrieval of said current copy of the requested portion of data, directing the system to send said requested data portion to the requesting node without going through said interconnect.

2. (Currently amended)                      A multiprocessor computer system comprising:  
a plurality of nodes, each node including at least one processor and portion of a shared distributed system memory coupled to said processor; and  
an interconnect both communicatively connecting said nodes with one another and exclusively storing locations of the most current copies and state information of data stored in the memory of the nodes such that the interconnect is a sole repository of cache coherence information within the multiprocessor computer system[.], said interconnect simultaneously provides requests to first and second nodes, wherein the results of the request from the second node is communicated to the first node without going through said interconnect.

8. (Currently amended)                      A method for maintaining cache coherence in a multiprocessor system having a plurality of nodes, each node having at least one cache, a memory device local to the node and at least one processor device,

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the memory and processor device being coupled to form a complete subsystem,  
the method comprising:

storing information regarding the state of data exclusively in a first part of  
an interconnect communicatively connecting said nodes with one another, such  
that the interconnect is a sole repository of cache coherence information within the  
multiprocessor system;

said first part checking said stored information to determine the location of  
the most current copy of a requested portion of data, in response to a request by  
a requesting node for data;

said first part directing a second part of the interconnect to forward the  
said most current copy of said data to the requesting node; and

said second part retrieving said current copy of requested portion of  
data and simultaneously directing said data to a target node without going  
through said interconnect.

### ***Conclusion***


2. Any inquiry concerning this communication or earlier communications from the  
examiner should be directed to Nasser G. Moazzami whose telephone number is (571)  
272-4195. The examiner can normally be reached on 7:00AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's  
supervisor, Donald Sparks can be reached on (571) 272-4201. The fax phone number  
for the organization where this application or proceeding is assigned is 703-872-9306.

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3. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**NASSER MOAZZAMI**  
**PRIMARY EXAMINER**



04/25/2005